

# OS421

## Smoke Sensor

The OS421 optical smoke sensor is used in mine haulages and shafts to measure smoke in the environment. It is an indispensable aid to the ventilation engineer, providing accurate measurements of smoke and early fire warning in underground mining operations.

The optical smoke sensor seamlessly integrates with any third-party system capable of interpreting 4-20mA signals, which includes our industry leading SL2010 Fire Detection and Environmental Monitoring system.

### KEY FEATURES

- Laser Scattering Technology
- Measures Smoke in 0-100% range.
- 15-30Vdc Input Voltage, 4-20mA Analog Output
- Ruggedized Design

### APPLICATIONS

- Intake air ways
- Return air ways
- Cable ducts/ tunnels
- Conveyor belt drive houses
- Conveyor Tunnels

### PRODUCT INFO

Type: OS421  
Part Number: SP00845



# OS421 OPTICAL SMOKE SENSOR

## FUNCTIONALITY

- The OS421 is an optical smoke sensor that uses laser scattering from visible smoke particles to detect smoke.
- The sensing module uses a fan to draw in air for sampling inside an optical chamber. The visible particles are counted and measured for size to determine the level of smoke.
- The OS421 has a 3 wire 4-20 mA industry standard electrical interface, making it compatible with most industry standard controllers, including SL2010 IOC devices.
- The OS421 electronic enclosure is ingress protected to IP 65 against dust and water.
- The OS421 is fitted with two external voltage test pads where the output signal can be verified with a Digital Multi- Meter (DMM).

## CERTIFICATION

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## MECHANICAL SPECIFICATIONS

**Physical Dimensions:** 127mm x 123mm x 260mm

**Weight:** ± 2.3 kg

## SPECIFICATIONS

**Measuring Range:** 0 – “100%” Smoke

**Analog Output Signal:** 4-20 mA

**Maximum Load Resistance:** 800 ohm @ 24V

**Test Signal:** 40 mV: Zero  
200 mV: Full Scale

**Supply:** 15 - 30VDC  
(3 wire system)

**Analog Output Signal:** 4 mA - 0%  
20 mA - 100%

**Electrical Protection:** Test output is short circuit protected

**Warm Up Time:** < 30 sec

**Life Expectancy:** Up to 10 years

## ENVIRONMENTAL SPECIFICATIONS

**Water and Dust:** IP 65

**Temperature:** 0 °C to +55 °C